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ATOMIC-1

IMPROVED BREATHING REGULATOR APPARATUS
HAVING AUTOMATIC FLOW CONTROL

ABSTRACT OF THE DISCLOSURE

A second stage breathing regulator especially suited for use in scuba diving, comprises an automatically adjustable air flow deflector or vane to redirect a portion of inlet high velocity air of a venturi-initiated vacuum assist-type regulator configuration. At greater depths the flow vane increasingly interrupts and redirects a selected portion of the air stream to increase the venturi effect. As a result, the diver's inhalation effort requirements can be relatively constant throughout the breathing cycle at any depth or can be tailored to a desired non-constant profile as a function of depth. A piston responsive to ambient water pressure by extension proportional to depth, places the flow vane to increasingly redirect the air flow at greater depths thereby increasing the venturi effect. The diver is thus freed of having to make manual adjustments to the second stage under water.

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